REMARKS

Claims 21- 27, 31-33 and 38-42 are now pending. By way of this response, claims 21, 23, 31, 32, and 41 have been amended and claim 22 has been cancelled. Thus, claims 21, 23 - 27, 31-33 and 38-42 are presented for examination. Applicant respectfully requests allowance of the present application in view of the foregoing amendments and following remarks.

Support for the amendments can be found throughout the specification, including, for example, paragraphs [0022] – [0023] and [0025]. No new matter has been added.

Claim Objections

Claims 21 and 41 are objected to because of informalities. The present amendments render such objections moot. Accordingly, Applicant requests that the objections be withdrawn.

Rejection of Claims under 35 USC 103

Claims 21 – 27 and 33 are rejected under Section 103 over *Allon* (U.S. 5539883) in view of *King* (U.S. 2004/0162945). Claims 31, 32, and 39 are rejected under Section 103 over *Allon* in view of *King* and further in view of *Liu* (US 6574664). Claim 38 is rejected under Section 103 over *Allon* in view of *King* and further in view of *Talagala* (US 2002/0162075). Claim 40 is rejected under Section 103 over *Allon* in view of *King* and further in view of *Root* (US 2002/0050737). Claims 41 and 42 are rejected under Section 103 over *Allon* in view of *Root* and further in view of *King*. Applicant traverses these rejections and requests allowance in view of the amendments and following remarks.

Independent claim 21, as amended, (and similarly independent claim 41) includes a number of features not disclosed, described, or suggested by the cited art alone or in combination.

Specifically, Claim 21, as amended, provides in relevant part:

> "…identifying, by each device in the network in a
> distributed manner, an order of devices in the network to
> establish a relationship based on predefined hierarchies of

connections for each node, comprising, **correspondingly for
each device in the network:**

(i) identifying a corresponding device's
associated node;

(ii) **determining the order of devices** by
ascertaining, for the corresponding device's associated
node, a number of connections and a predefined hierarchy
for the connections, which of the number of connections is
connected to the corresponding device and a hierarchy for
that connection, and which of the number of connections are
still occupied and connected to other nodes and other
devices and the hierarchies for those connections; and

(iii) **storing the order of devices in the
corresponding device;**

such that after identifying the order of devices
correspondingly for each device in the network in
accordance with (i) – (iii), **each device in the network has
distributively stored therein the order of devices,
enabling each device to ascertain direct and indirect
relationships between the devices…"**

As set forth above, it is important to note that the claims require <u>each individual device</u> to "discover" the order of devices by looking to its associate node, looking at the other connected devices, identifying the hierarchy of connections based on a predetermined hierarchy for the node, and then determining the order of devices based on this information and storing it locally therein. Applicant submits that at least the above indicated features of the amended claim(s) are not disclosed, described or suggested by any of *Allon, Root,* or *King,* alone or in combination with each other or with the other cited references.

Allon is directed to load balancing of network by maintaining in each computer information regarding current load on the computer and load on some other computers in the network. Logical links are generated between the computer and other computers in the network. The generation of <u>the logical links can be achieved by assigning a rank to each computer,</u> no two computers being assigned the same rank, each computer being logically linked to one computer

of lower rank and a number of computers of higher rank to form the tree structure. The tree structure can be maintained if a computer fails, or is otherwise inoperative, <u>by generating new logical links between each of the computers</u> lower down the tree to which the failed computer was linked and other computers, which have capacity for accepting new downward links.

King is directed to an apparatus that includes a hierarchy of field replaceable units (FRUs). Each FRU in the hierarchy may have a number of subsidiary FRUs, each of a particular type. <u>A FRU includes stored FRU identity data, relating to or describing the FRU itself, and subsidiary FRU data that is indicative of at least the number and type of any subsidiary FRUs that may be immediately below the in the hierarchy</u>.

Without conceding the propriety of the combination of references, Applicant submits that the independent claims contain features that are not disclosed or suggested in the cited art, alone or in combination.

Specifically, claim 21, as amended, includes having <u>each device itself</u> determine from its connected node <u>the order of devices</u> on the network (because each node has a predetermined hierarchy of connections). <u>Each device then stores the order of devices therein</u>. Then, upon replacing a device in the network, the replacement device can receive from a neighboring device the order of devices to allow reconstruction of the network on a decentralized basis using the stored order of devices received from the neighbor.

Nothing in *Allon or King* describes distributively storing the order of devices (previously identified by each device based on hierarchies of connections for each node) in the devices themselves and then using this stored information to reconstruct the network when devices are replaced by getting the information from a neighbor. *Allon* merely describes ranking the computers, not identifying by each device based on hierarchies of connections the order of devices and distributively storing the order of devices. *King* merely describes an FRU storing subsidiary FRU data, which necessarily would only comprise "downstream" information, not the full order of devices as determined in the present claim. The remaining references fail to remedy the shortcomings of *Allon and King.*

Since none of the cited art, alone or in combination, includes this feature of having each device identify and then store the order of devices therein so that upon replacing a device in the network, the replacement device can receive from a neighboring device the order of devices to allow reconstruction of the network on a decentralized basis, nor is there any suggestion to add

such a feature to the cited art (without resorting to impermissible hindsight), Applicant submits that claim 21 is not obvious in view thereof.

Applicant therefore respectfully requests that the Office reconsider and withdraw the rejection of independent claim 21 for at least the above-stated reasons.

In a similar fashion, independent claim 41 includes having each device itself determine from its connected node the order of devices on the network (because each node has a predetermined hierarchy of connections). Each device then stores the order of devices therein. With this information, each device can ascertain direct and indirect relationships between the devices determinative of the relative spatial arrangements among the devices.

Root is directed to integrated train electrical and pneumatic brakes. The integrating of the computer controlled braking systems with the electrical controlled pneumatic brake system is achieved by interconnecting these systems as nodes on a common network.

Nothing in *Allon, King, or Root* describes distributively storing the order of devices (previously identified by each device based on hierarchies of connections for each node) in the devices themselves and then using this stored information to ascertain direct and indirect relationships between the devices determinative of the relative spatial arrangements among the devices as discussed above with respect to claim 21. The remaining references fail to remedy the shortcomings of *Allon, King, or Root.*

Since none of the cited art, alone or in combination, includes this feature, nor is there any suggestion to add such a feature to the cited art (without resorting to impermissible hindsight), Applicant submits that claim 41 is not obvious in view thereof.

Applicant therefore respectfully requests that the Office reconsider and withdraw the rejection of independent claim 41 for at least the above-stated reasons.

Dependent Claims, including all 35 USC 103(a) Rejections

The dependent claims incorporate all of the subject matter of their respective independent claims and add additional subject matter, which makes them a fortiori and independently patentable over the art of record. Accordingly, Applicant respectfully requests that the outstanding rejections of the dependent claims be reconsidered and withdrawn.

Based on at least the above-noted distinctions it is urged that the claims are fully distinguished over the cited art. Allowance of the claims is requested.

Conclusion

The Commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16(c), 1.17(a)(1) and 1.20(d), or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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By: Janet D. Hood
Janet D. Hood
Registration No. 61,142
(407) 736-4234

Siemens Corporation
Intellectual Property Department
170 Wood Avenue South
Iselin, New Jersey 08830